



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

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Project Title The Effect of Temperature on the Life Cycle of Chrysaora achlyos: From Ephyra to Medusa Stage	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of this experiment is to determine if high or low temperatures affect Achlyos survival and growth. The hypothesis was that if Achlyos were contained in a colder atmosphere, then the Achlyos would mature into a medusa faster.</p> <p>Methods/Materials The experiment took approximately three weeks. To set up for this experiment Achylos had to live in a salt-water tank. Twenty Achylos were picked of similar size and placed in two separate tanks. One had a temperature of 68 degrees Fahrenheit and the other 58 degrees Fahrenheit. The jellyfish were observed twice a week. The constant in this experiment was the Achlyos were fed the same type and amount of food, rotifers and brine shrimp, which were fed three times a day by carefully matching the density of rotifers and shrimp in the jelly tanks.</p> <p>Results In this experiment it was observed that the Achlyos had adapted to the 58 Farenheit better and matured faster. One noticeable result in this experiment was that all of the Achylos in both tanks grew at least three millimeters over four weeks. Another relationship between growth size and time is that the Achylos in the 68 Farenheit tank grew at a slower pace.</p> <p>Conclusions/Discussion The findings support the research hypothesis that they will grow quicker in a colder habitat. This prediction was made because it was thought that if jellyfish would adapt to colder climates their growth would increase because of the similarity to natural environments. In future experiments, the Achlyos can be measured more frequently, have a greater population of jellyfish, and have multiple trials, which may reveal a greater difference between jellies at each temperature. Several problems were encountered in the first trial, water flow was too strong, which caused the jellyfish to get stuck in the net and die. In the future #the surface area of the exit screen must be maximized so that the drain pressure at any one point is low enough to prevent the medusa from being trapped against the screen# (Cross). New jellyfish were selected but in Trial 2 it was discovered that the jellyfish were missing, because there was a hole in the tank and again, new jellyfish were selected. Trial 3 lasted for three weeks. Three of the jellyfish in the 68-degree tank were missing because the tank had hydrozoans, which ate the jellyfish. This only allowed for six collections of data instead of eight and only seven jellyfish were measured.</p>	
Summary Statement The main focus of our project was to determine if temperature has an affect on the development of Chrysaora Achlyos.	
Help Received Used the lab at Cabrillo Marine Aquatic Nursery under the supervision of Kirsten Darrow.	